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PTO/SB/21 (08-03)

Approved for use through 07/31/06. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

11

Application Number

10/730,658

Filing Date

December 8, 2003

First Named Inventor

James Thomas Doyle

Group Art Unit

2838

Examiner Name

Unknown

Attorney Docket Number

100-24000 (P05764)

### ENCLOSURES (check all that apply)

☐ Fee Transmittal Form

☐ Fee Attached

☐ Amendment/Response

☐ After Final (Response)

☐ Affidavits/declaration(s)

☐ Extension of Time Request

☐ Express Abandonment Request

☒ Information Disclosure Statement  
Form PTO-1449 (3 pgs.) and 28  
references

☐ Certified Copy of Priority  
Document(s)

☐ Response to Missing Parts/  
Incomplete Application

☐ Response to Missing  
Parts under 37 CFR  
1.52 or 1.53

☐ Assignment Papers  
(for an Application)

☐ Drawing(s)

☐ Licensing-related Papers

☐ Petition Routing Slip (PTO/SB/69)  
and Accompanying Petition

☐ Petition to Convert to a  
Provisional Application

☐ Power of Attorney, Revocation  
Change of Correspondence Address

☐ Terminal Disclaimer

☐ Request for Refund

☐ CD, Number of CD(s) \_\_\_\_\_

☐ After Allowance Communication to  
Group

☐ Appeal Communication to Board of  
Appeals and Interferences

☐ Appeal Communication to Group  
(Appeal Notice, Brief, Reply Brief)

☐ Proprietary Information

☐ Status Inquiry

☒ Other Enclosure(s)  
(please identify below):

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Remarks

Please charge any necessary fees or credit overpayment to  
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### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm  
or  
Individual name

Mark C. Pickering, Reg. No. 36,239

Signature

*Mark C. Pickering*

Date

June 16, 2004

### CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope  
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Typed or printed name Robin L. King

Signature

*Robin L. King*

Date

June 16, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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**TRANSMITTAL  
FORM***(to be used for all correspondence after initial filing)*

<b>Total Number of Pages in This Submission</b>	<b>11</b>	<b>Application Number</b>	10/730,658
		<b>Filing Date</b>	December 8, 2003
		<b>First Named Inventor</b>	James Thomas Doyle
		<b>Group Art Unit</b>	2838
		<b>Examiner Name</b>	Unknown
		<b>Attorney Docket Number</b>	100-24000 (P05764)

**ENCLOSURES (check all that apply)**

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
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- ☒ Other Enclosure(s) (please identify below):  
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**Certificate of Mailing**

Remarks

**Please charge any necessary fees or credit overpayment to Deposit Account No. 502305. A duplicate copy of this transmittal is attached for this purpose.****SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

<b>Firm or Individual name</b>	Mark C. Pickering, Reg. No. 36,239
<b>Signature</b>	
<b>Date</b>	June 16, 2004

**CERTIFICATE OF MAILING**

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Typed or printed name Robin L. King

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June 16, 2004

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inter Patent Application of	)	Group Art Unit: 2838
James Thomas Doyle	)	Examiner: Unknown
Application No. 10/730,658	)	INFORMATION DISCLOSURE
Filed: December 8, 2003	)	<u>STATEMENT</u>
For: POWER SUPPLY SYSTEM AND METHOD	)	
THAT PROVIDES A LOW-COST	)	
APPROACH TO VOLTAGE SCALING	)	
	)	
	)	

Mail Stop Amendment  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

Applicant submits herewith information of which applicant is aware, which applicant believes may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

This Information Disclosure Statement:

- (a) ☐ accompanies the new patent application submitted herewith. 37 CFR § 1.97(a).
- (b) ☐ is filed within three months after the filing date of the application or within three months after the date of entry of the national stage of a PCT application as set forth in 37 CFR § 1.491.
- (c) ☒ as far as is known to the undersigned, is filed before the mailing date of a first Office Action on the merits.

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Dated: June 16, 2004 By: Robert L. King

(d) ☐ is filed after the first office action and more than three months after the application's filing date or PCT national stage date of entry filing but, as far as is known to the undersigned, prior to the mailing date of either a final rejection or a notice of allowance, whichever occurs first, and is accompanied by either the fee (\$180) set forth in 37 CFR § 1.17(p) or a certification as specified in 37 CFR § 1.97(e), as checked below.

(e) ☐ is filed after the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and is accompanied by the fee (\$180) set forth in 37 CFR § 1.17(i)(1) and a certification as specified in 37 CFR § 1.97(e), as checked below. This document is to be considered as a petition requesting consideration of the information disclosure statement.

[If either of boxes (d) or (e) are checked above, the following "certification" under 37 CFR § 1.97(e) may need to be completed.] The undersigned certifies that:

(f) ☐ Each item of information contained in the information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

(g) ☐ No item of information contained in this information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of this information disclosure statement.

A list of the patent(s) or publications(s) is set forth on the attached Form PTO-1449 (Modified). A copy of the items on PTO-1449 (Modified) is supplied herewith:

(h) ☒ each

(i) ☐ none

(j) ☐ only those listed below:

Those patent(s) or publication(s) which are marked with an asterisk (\*) in the attached form PTO-1449 (Modified) are not supplied because they:

☐ were previously cited by or submitted to the Office in a prior application no. \_\_\_\_\_ filed \_\_\_\_\_ and relied upon in this application for an earlier filing date under 35 U.S.C. § 120 or

☐ are hereby waived pursuant to 37 CFR 1.98 (a)(2)(i) for all U.S. national patent applications filed after June 30, 2003.

A concise explanation of relevance of the described above and attached information is:

(k) ☒ not given

(l) ☐ given for each listed item

- (m) [ ] given for only non-English language listed item(s) [Required]
- (n) [ ] is in the form of an English language copy of a Search Report from a foreign patent office, issued in a counterpart application, which refers to the relevant portions of the references [copy attached].

While the information disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that the information referred to is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR § 1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR § 1.98 and MPEP § 609 and the Examiner is respectfully requested to consider the above-described and attached information.

The Commissioner is hereby authorized to charge our Deposit Account No. 502305 for any fees required in connection with the filing of the Information Disclosure Statement. **A duplicate copy of this Notice is enclosed for this purpose.** In particular, in the event that an Office Action has cross in the mail with this Information Disclosure Statement, the Commissioner is authorized to charge the above-named deposit account for any fees required pursuant to 37 C.F.R. §1.17(p) or 1.17 (i) (1).

Respectfully submitted,

Dated: 6-16-04

By: Mark C. Pickering  
Mark C. Pickering  
Reg. No. 36,239

Attorney for Assignee

Atty. Docket No: 100-24000 (P05764)

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# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

100-24000 (P05764)

Application Number

10/730,658

Applicant(s)

James Thomas Doyle

Filing Date

December 8, 2003

Group Art Unit

2838

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,602,882	02/11/97	Co et al.	375	372	01/19/96
		6,351,165 B1	02/26/02	Gregorian et al.	327	156	08/21/00
		6,262,611 B1	07/17/01	Takeuchi	327	159	06/23/00
		6,720,808 B1	04/13/04	Chan	327	143	11/12/02

## U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO

## OTHER DOCUMENTS

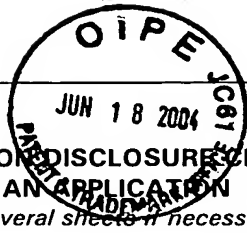
(Including Author, Title, Date, Pertinent Pages, Etc.)

John G. Maneatis, "Low-Jitter Process-Independent DLL and PLL Based on Self-Biased Techniques", 1996 ISCCC8.1 Presentation Slides, 3 sheets, IEEE Journal of Solid-State Circuits, Vol. 31, No. 11, November 1996, pps. 1723-1732.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



<b>FORM PTO-1449</b>  <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> <i>(Use several sheets if necessary)</i>	<b>Docket Number (Optional)</b> 100-24000 (P05764)	<b>Application No.</b> 10/730,658
	<b>Applicant(s)</b> James Thomas Doyle	
	<b>Filing Date</b> December 8, 2003	<b>Group Art Unit</b> 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	Dragan Maksimovic, Bruno Kranzen, Sandeep Dhar and Ravindra Ambatipudi, U.S. Patent Application No. 10/053,226, filed January 19, 2002, entitled "An Adaptive Voltage Scaling Digital Processing Component and Method of Operating the Same".
	Bruno Kranzen and Dragan Maksimovic, U.S. Patent Application No. 10/053,227, filed January 19, 2002, entitled "Adaptive Voltage Scaling Clock Generator for Use in a Digital Processing Component and Method of Operating the Same".
	Dragan Maksimovic and Sandeep Dhar, U.S. Patent Application No. 10/053,828, filed January 19, 2002, entitled "System for Adjusting a Power Supply Level of a Digital Processing Component and Method of Operating the Same".
	Dragan Maksimovic, Ravindra Ambatipudi, Sandeep Dhar and Bruno Kranzen, U.S. Patent Application No. 10/053,228, filed January 19, 2002, entitled "An Adaptive Voltage Scaling Power Supply for Use in a Digital Processing Component and Method of Operating the Same".
	James T. Doyle and Dragan Maksimovic, U.S. Patent Application No. 10/160,428, filed March 26, 2002, entitled "Method and System for Minimizing Power Consumption in Mobile Devices Using Cooperative Adaptive Voltage and Threshold Scaling".
	Dragan Maksimovic and James Thomas Doyle, U.S. Patent Application No. 10/166,822, filed June 10, 2002, entitled "Serial Digital Communication Superimposed on a Digital Signal Over a Single Wire".
	Dragan Maksimovic and Sandeep Dhar, U.S. Patent Application No. 10/236,482, filed September 6, 2002, entitled "Method and System for Providing Self-Calibration for Adaptively Adjusting a Power Supply Voltage in a Digital Processing System".
	Dragan Maksimovic and Sandeep Dhar, U.S. Patent Application No. 10/272,027, filed October 15, 2002, entitled "All Digital Power Supply System and Method That Provides a Substantially Constant Supply Voltage Over Changes in PVT Without a Band Gap Reference Voltage".
	Wai Cheong Chan and Donald Kevin Cameron, U.S. Patent Application No. 10/324,997, filed December 18, 2002, entitled "System and Method for Signal Delay in an Adaptive Voltage Scaling Slack Detector".
	Mark F. Rives, U.S. Patent Application No. 10/246,971, filed September 19, 2002, entitled "Power Supply System and Method that Utilizes an Open Loop Power Supply Control".
	Jim Doyle and Bill Broach, Small Gains in Power Efficiency Now, Bigger Gains Tomorrow [online]. July 9, 2002 [retrieved on 2003-02-01]. Retrieved from the Internet: <URL: <a href="http://www.commsdesign.com/design_corner/OEG20020709S0022">http://www.commsdesign.com/design_corner/OEG20020709S0022</a> >. pps. 1-5.
	Robert W. Erickson and Dragan Maksimovic, <u>Fundamentals of Power Electronics</u> , Second Edition, Kluwer Academic Publishers, 2001, pp. 333.
	Krisztian Flautner, Steven Reinhardt and Trevor Mudge, Automatic Performance Setting for Dynamic Voltage Scaling, Wireless Networks, Volume 8, Issue 5, September 2002, pps. 507-520, and Citation, pps. 1-3, [online]. [retrieved on 2003-02-02]. Retrieved from the Internet: <URL: <a href="http://portal.acm.org/citation.cfm?id=582455.582463&amp;coll=portal&amp;dl=ACM&amp;idx=J804&amp;p....">http://portal.acm.org/citation.cfm?id=582455.582463&amp;coll=portal&amp;dl=ACM&amp;idx=J804&amp;p....</a> >.
	Krisztian Flautner, Steven Reinhardt and Trevor Mudge, Automatic Performance Setting for Dynamic Voltage Scaling [online]. May 30, 2001, [retrieved on 2003-02-02]. Retrieved from the Internet: <URL: <a href="http://www.eecs.umich.edu/~tnm/papers/mobicom01.pdf">http://www.eecs.umich.edu/~tnm/papers/mobicom01.pdf</a> >. pps. 1-12.
	Texas Instruments, "Synchronous-Buck PWM Controller With NMOS LDO Controller", TPS5110, SLVS025A-April 2002, Revised June 2002.
	Intel XScale Core, Developer's Manual, December 2000, [online], [retrieved on 2003-02-02]. Retrieved from the Internet: <URL: <a href="http://developer.intel.com/design/intelxscale/27347301.pdf">http://developer.intel.com/design/intelxscale/27347301.pdf</a> >. pps. 1-1 through B-1.

<b>EXAMINER</b>	<b>DATE CONSIDERED</b>
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<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>				Docket Number (Optional) <b>100-24000 (P05764)</b>		Application Number <b>10/730,658</b>		
				Applicant(s) <b>James Thomas Doyle</b>				
				Filing Date <b>December 8, 2003</b>		Group Art Unit <b>2838</b>		
<b>U.S. PATENT DOCUMENTS</b>								
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		6,498,512 B2	12/24/02	Simon et al.	326	93	02/27/01	
		6,317,008 B1	11/13/01	Gabara	331	117 R	01/26/99	
		10/351,061		Chan et al.			01/24/03	
		10/351,056		Chan et al.			01/24/03	
		10/402,091		Doyle			03/28/03	
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							YES	NO
<b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>								
		Kaushik Roy, Leakage Tolerant Circuits, Sub-Threshold Logic [online]. No date, [retrieved by inventor approximately 2002-11-01]. Retrieved from the Internet:<URL:http://www.ece.purdue.edu/~visi/seven.pdf>. pps. 1-43.						
		Benjamin James Patella, "Implementation of a High Frequency, Low-Power Digital Pulse Width Modulation Controller Chip", Thesis Submitted To Graduate School of University of Colorado in Department of Electrical and Computer Engineering, 2000, pps. 1-272.						
EXAMINER				DATE CONSIDERED				
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